CLAIMS

1. (original) A method for enhancing a discrete pixel image, the method comprising the steps of:

(a) smoothing image data representative of pixels of a reconstructed image;

(b) identifying structural features from the smoothed image data;

(c) orientation smoothing the structural features;

(d) homogenization smoothing non-structural regions;

(e) orientation sharpening the structural features;

(f) blending texture from the image data into data processed in accordance with the foregoing steps.

2. (original) The method of claim 1, wherein the structural features are determined based upon a scaled threshold value.

3. (original) The method of claim 2, wherein the scaled threshold value is computed based upon an initial threshold value and a scaling factor input by a user.

4. (original) The method of claim 1, wherein in step (b) the structural features include pixels having values below a first threshold value but above a second, lower threshold value, and positioned adjacent to a structural pixel.

5. (original) The method of claim 1, wherein step (c) includes dominant orientation smoothing pixels based upon a dominant orientation and an orientation orthogonal to the dominant orientation.

6. (original) The method of claim 5, wherein dominant orientation smoothing is performed based upon a predetermined relationship between a characteristic of each structural pixel in the dominant orientation and in the orthogonal orientation.

7. (original) The method of claim 6, wherein the characteristic is a number of counts of orientations within a neighborhood of each structural pixel.

8. (original) The method of claim 1, wherein step (e) is performed only for structural pixels having a value above a desired lower limit value.

9. (original) A method for enhancing a discrete pixel images, the method comprising the steps of:

(a) identifying structural features from discrete pixel image data based upon a user selected scaling factor applied to a predetermined threshold value;

(b) orientation smoothing the structural features;

(c) homogenization smoothing non-structural regions;

(d) orientation sharpening the structural features; and

(e) bending texture into the image data processed in accordance with the foregoing steps.

10. (original) The method of claim 9, comprising the further step of smoothing the image data prior to identifying the structural features.

11. (original) The method of claim 9, wherein the structural features include pixels having values below a first threshold value but above a second, lower threshold value, and positioned adjacent to a structural pixel.

12. (original) The method of claim 9, wherein step (b) includes dominant orientation smoothing pixels based upon a dominant orientation and an orientation orthogonal to the dominant orientation.

13. (original) The method of claim 12, wherein dominant orientation smoothing is performed based upon a predetermined relationship between a characteristic of each structural pixel in the dominant orientation and in the orthogonal orientation.

14. (original) The method of claim 13, wherein the characteristic is a number of counts of orientations within a neighborhood of each structural pixel.

15. (original) The method of claim 9, wherein step (d) is performed only for structural pixels having a value above a desired lower limit value.

16. (original) A method for enhancing a discrete pixel images, the method comprising the steps of:

(a) identifying structural features from discrete pixel image data, the structural features including pixels having values above a first threshold and pixels having values below the first threshold value but above a second, lower threshold value and positioned adjacent to a first pixel;

(b) orientation smoothing the structural features;

(c) homogenization smoothing non-structural regions;

(d) orientation sharpening the structural features; and

(e) blending texture into image data processed in accordance with the foregoing steps.

17. (original) The method of claim 16, wherein first threshold is based upon a scaling factor selected by a user.

18. (original) The method of claim 16, wherein step (b) includes dominant orientation smoothing pixels based upon a dominant orientation and an orientation orthogonal to the dominant orientation.

19. (original) The method of claim 18, wherein dominant orientation smoothing is performed based upon a predetermined relationship between a characteristic of each structural pixel in the dominant orientation and in the orthogonal orientation.

20. (original) The method of claim 16, wherein the characteristic is a number of counts of orientations within a neighborhood of each structural pixel.

21. (original) The method of claim 16, wherein step (d) is performed only for structural pixels having a value above a desired lower limit value.

22. (original) A method for enhancing a discrete pixel image, the method comprising the steps of:

(a) identifying structural features from discrete pixel image data;

(b) orientation smoothing the structural features based upon a dominant orientation for each pixel and an orientation orthogonal to the dominant orientation;

(c) homogenization smoothing non-structural regions;

(d) orientation sharpening the structural features; and

(e) blending texture into image data processed in accordance with the foregoing steps.

23. (original) The method of claim 22, comprising the further step of smoothing the image data prior to identifying the structural features.

24. (original) The method of claim 22, wherein the structural features are determined based upon a scaled threshold value.

25. (original) The method of claim 24, wherein the scaled threshold value is computed based upon an initial threshold value and a scaling factor input by a user.

26. (original) The method of claim 22, wherein in step (a) the structural features include pixels having values below a first threshold value but above a second, lower threshold value, and positioned adjacent to a structural pixel.

27. (original) The method of claim 22, wherein dominant orientation smoothing is performed based upon a predetermined relationship between a characteristic of each structural pixel in the dominant orientation and in the orthogonal orientation.

28. (original) The method of claim 27, wherein the characteristic is a number of counts of orientations within a neighborhood of each structural pixel.

29. (original) The method of claim 1, wherein step (d) is performed only for structural pixels having a value above a desired lower limit value.

30. (original) A system for enhancing a discrete pixel image, the system comprising:

an output device for producing a reconstructed image based upon processed image data; and

a signal processing circuit configured to provide processed image data by smoothing image data representative of pixels of the reconstructed image, identifying structural features from the smoothed image data, orientation smoothing the structural features, homogenization smoothing non-structural regions, orientation sharpening the structural features, and blending of texture into final image data.

31. (original) The system of claim 30, further comprising an image data acquisition system for producing image data signals processed by the signal processing circuit.

32. (original) The system of claim 31, wherein the image data acquisition system includes a magnetic resonance scanner.

33. (original) The system of claim 30, wherein the structural features are determined based upon a scaled threshold value.

34. (original) The system of claim 33, wherein the scaled threshold value is computed based upon an initial threshold value and a scaling factor input by a user.

35. (original) The system of claim 30, wherein in the structural features include pixels having values below a first threshold value but above a second, lower threshold value, and positioned adjacent to a structural pixel.

36. (original) The system of claim 30, wherein the dominant orientation smoothing is based upon a dominant orientation and an orientation orthogonal to the dominant orientation.

37. (original) The system of claim 30, wherein dominant orientation smoothing is performed based upon a predetermined relationship between a characteristic of each structural pixel in the dominant orientation and in the orthogonal orientation.

38. (original) The system of claim 37, wherein the characteristic is a number of counts of orientations within a neighborhood of each structural pixel.

39. (original) The system of claim 30, wherein the sharpening is performed only for structural pixels having a value above a desired lower limit value.